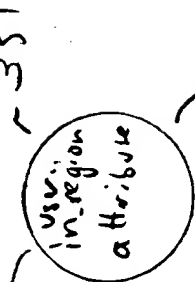
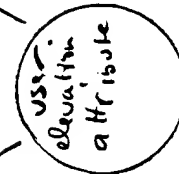
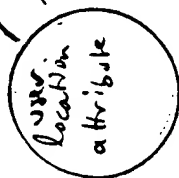
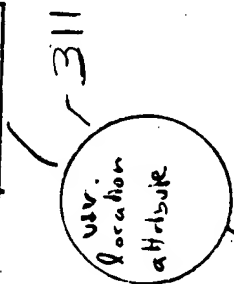
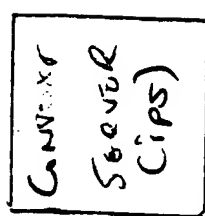
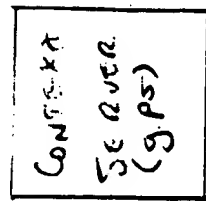


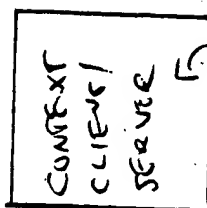
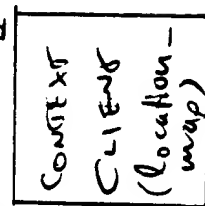
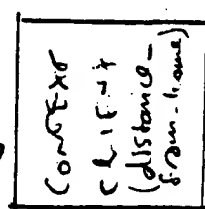
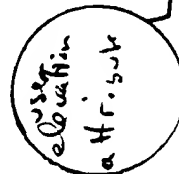
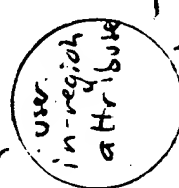
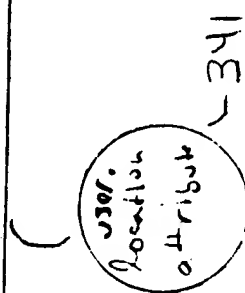
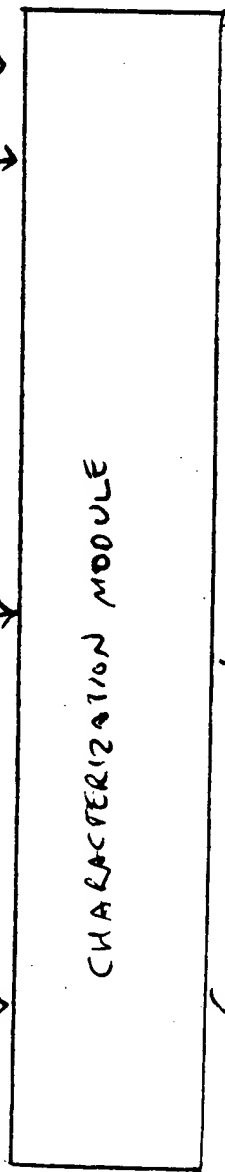
Fig. 2

310

320



300



region-
query 511

340

350

FIG-3

03/15/00 8:28 PM

context server table

context server name	version	installation date	filename	request handler
gps	1	2/10/2000	gps.exe	(reference)
ips	1	2/21/2000	ips.exe	(reference)
location region analysis	1	2/10/2000	l r a.exe	(reference)

FIG 4

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° 09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° 021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22	5	13:11:01.118 2/22/2000	meters	1
user.in_region	location_region_analysis	none	none	none	none	0

FIG 5

600-

212

750.

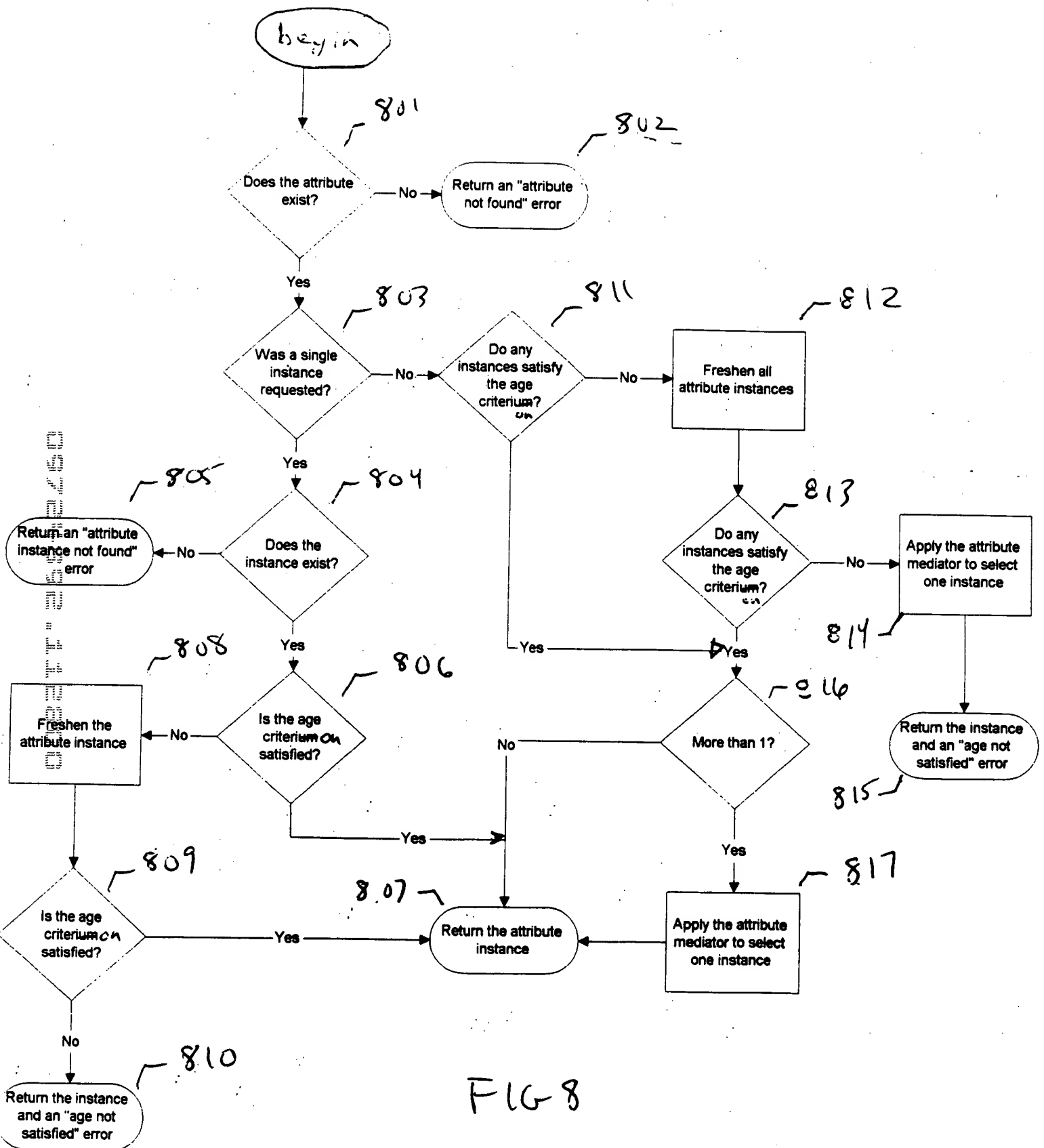


FIG 8

03/15/00 9:18 PM

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° 09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° 021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22.25	.5	13:11:06.565 2/22/2000	meters	1
user.in region	region analysis	none	none	none	none	1

FIG 9

condition table

condition name	context client name	first logical parameter	second logical parameter	comparison value	logical operator
in region true	region analysis	user.in region	none	TRUE	=

FIG 10

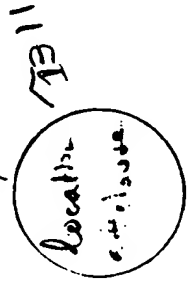
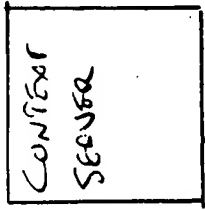
101

811

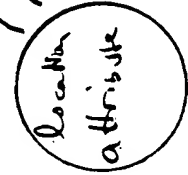
1201

81218

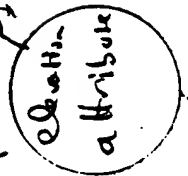
1310



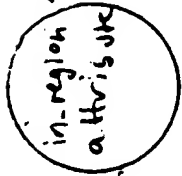
1320



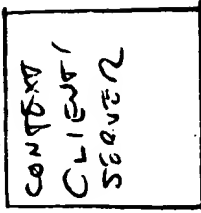
1322



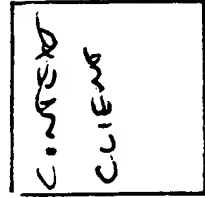
1331



1330



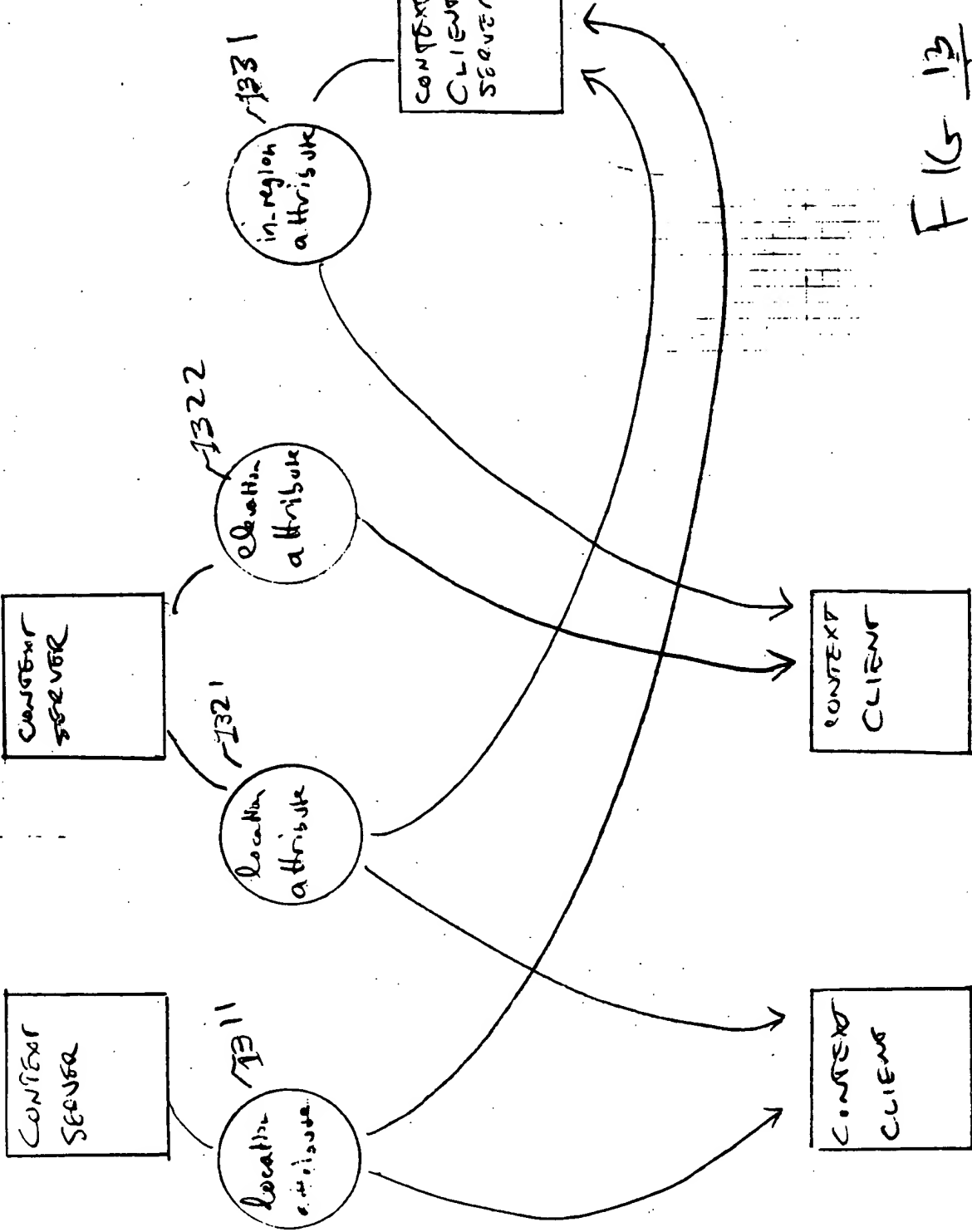
1340



1350



FIG 13



1401 ~
1402 ~
1403 ~
1404 ~

attribute name	context client name
user.location	distance_from_home
user.in_region	location_map
user.location [gps]	location_region_analysis
user.elevation	location_map

L 1411

2 1412

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

2025

Person.<name or ID>. (same as User.)

VI.

Platform. (continued)

Fig. 15

People.

Local.

Place.<place name>. (same as Environment.Local)

Mail.

Phone.

Sound recorder.

**Available
Recording**

1) User Setting

a) Mental Context

- i) Meaning
- ii) Cognition
 - (1) Divided User Attention
 - (2) Task Switching
 - (3) Background Awareness

iii) Solitude

iv) Privacy

- (1) Desired Privacy
- (2) Perceived Privacy

v) Social Context

vi) Affect

b) Physical Situation

i) Body

- (1) Biometrics
- (2) Posture
- (3) Motion
- (4) Physical Encumbrment
 - (a) Senses
 - (i) Eyes
 - (ii) Ears
 - (iii) Tactile
 - (iv) Hands
 - (v) Nose
 - (vi) Tongue
 - (b) Workload demands/effects
 - (c) Interaction with computer devices
 - (d) Interaction with people
 - (e) Physical Health

ii) Environment

- (1) Time/Space
- (2) Objects
- (3) Persons
 - (a) Audience/Privacy Availability
 - (i) Scope of Disclosure
 - (ii) Hardware affinity for privacy
 - (iii) Privacy Indicator for User
 - (iv) Privacy Indicator for Public
 - (v) Watching Indicator
 - (vi) Being Observed Indicator

(4) Ambient Interference

- (a) Visual
- (b) Audio
- (c) Tactile

2) Computer

a) Power

b) Configuration

i) User Input Systems

- (1) Hand/Haptic
 - (a) Keyboard/Keystrokes
- (2) Voice/Audio
- (3) Eye Tracking
- (4) Cursors
 - (a) Axis
 - (b) Resolution
 - (i) Selection
 - (ii) Invocation
 - (c) Accelerators

ii) Output Systems

- (1) Visual
 - (a) Resolution
- (2) Audio
 - (a) Public/Private
- (3) Haptic

iii) External Resources

- (1) I/O devices
- (2) Connectivity

c) Data

- i) Quantity/State
- ii) Urgency/Importance
 - (1) Use of Prominence
- iii) Modality
- iv) Sensitivity/Purpose
 - (1) Privacy Issues
 - (2) Use of Association
 - (3) Use of Safety
- v) Source/Ownership
 - (1) Types
 - (a) User generated
 - (b) Other computers or people
 - (c) Sensor
 - (d) PC State
 - (2) Use of Association

Fig. 16

Fig. 17

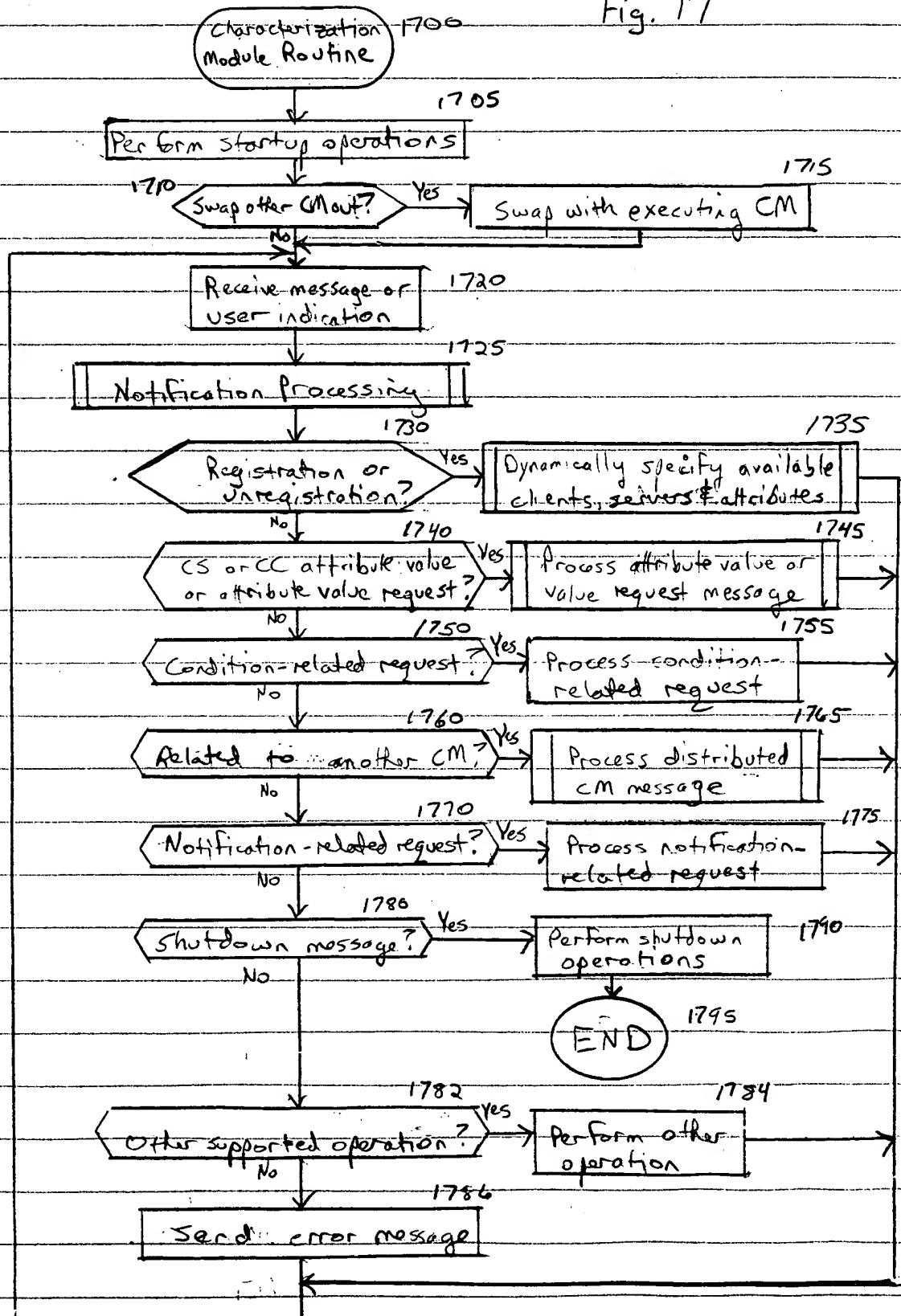


Fig. 18

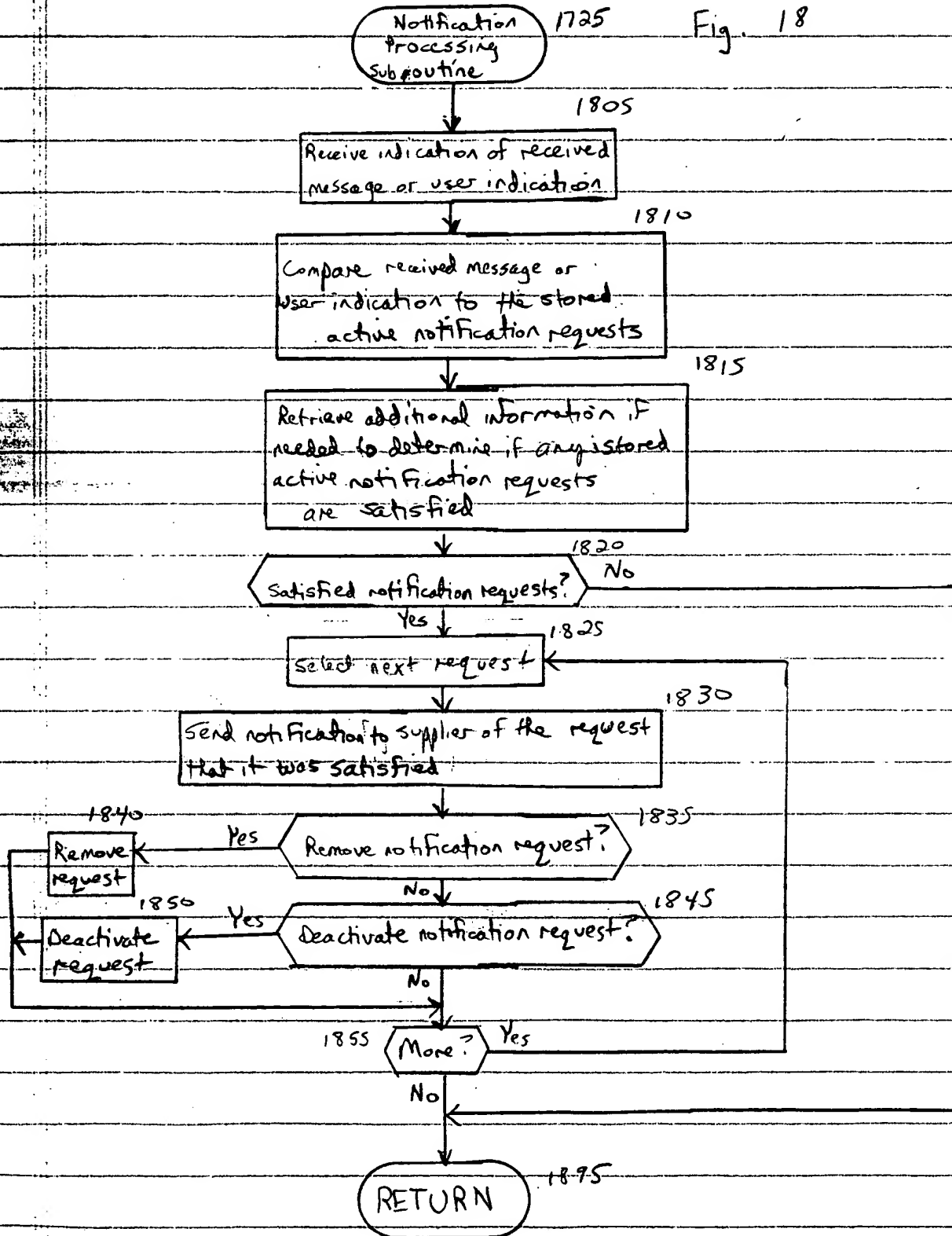
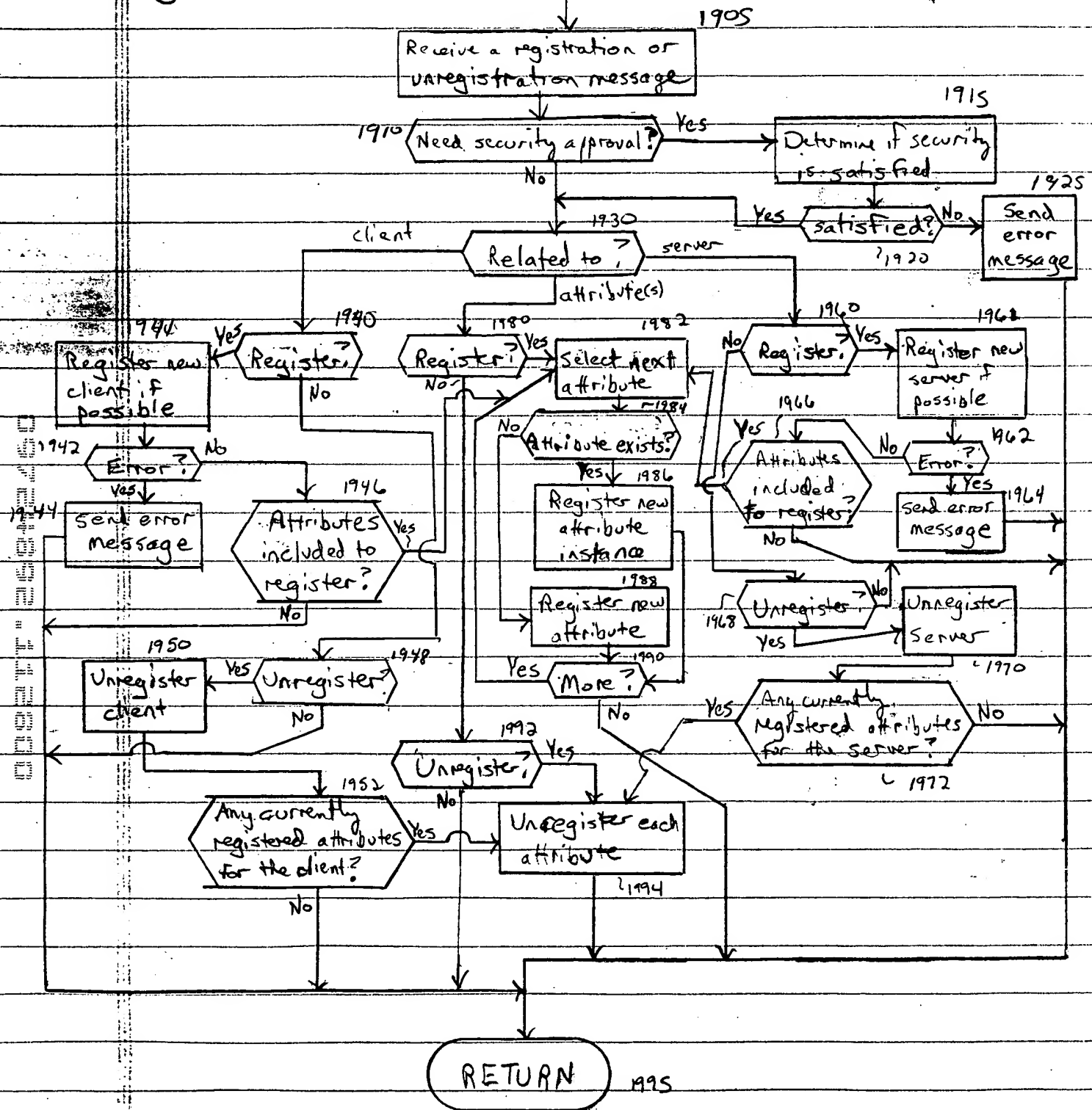


Fig. 19

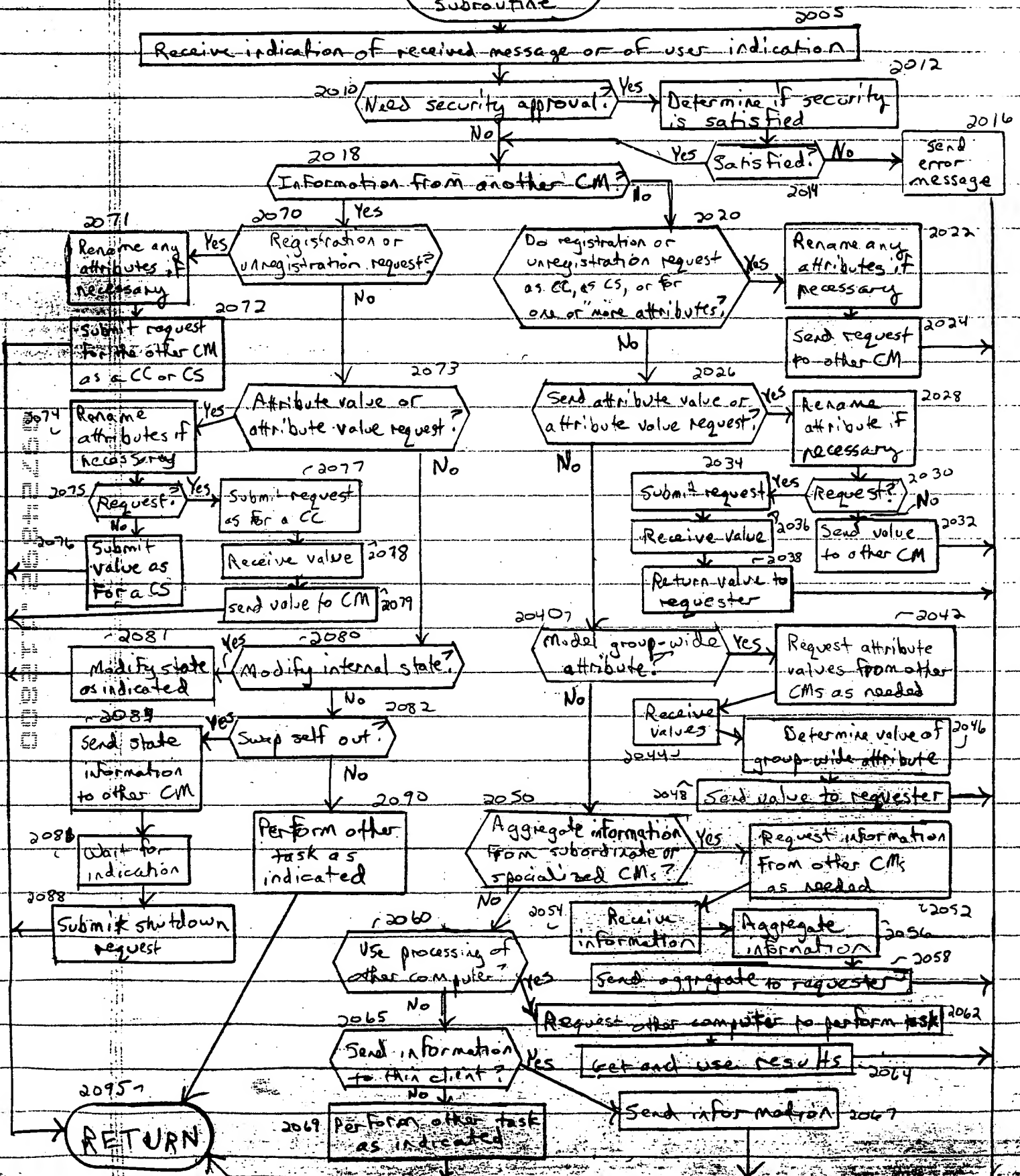
Dynamically Specify Available
clients, Servers, & Attributes
Subroutine 1735



Process Distributed CM Message Subroutine

1765

Fig. 20



1745
Process Attribute Value
or Value Request Message
Subroutine

Fig. 21

2105

Receive indication of received
attribute value or value request

Request Value or request? Value

2150 Identify all attribute
instances matching
the request

2152 Any instances?
No
Yes

2154 Send
error
message

Select next instance

2158 Need new value?
No
Yes

2160 Pull attribute value
from server

2162 Receive value?
No
Yes

2164 Process received
attribute value

2166 More?
Yes
No

2168 Multiple values
available?
No
Yes

2170 Mediate available
values

2172 Send mediated value and
additional information
to requester

2174 Single value
available?
No
Yes

2176 Send value and
additional
information
to requester

2178 Send error
message

2195 RETURN

2120 Process received
attribute value

2122 Identify all attribute
value requests that
match the value

2124 Any requests?
No
Yes

2130 Multiple attribute
instance values?
Yes
No

2132 Mediate available
values

2134 Select mediated value

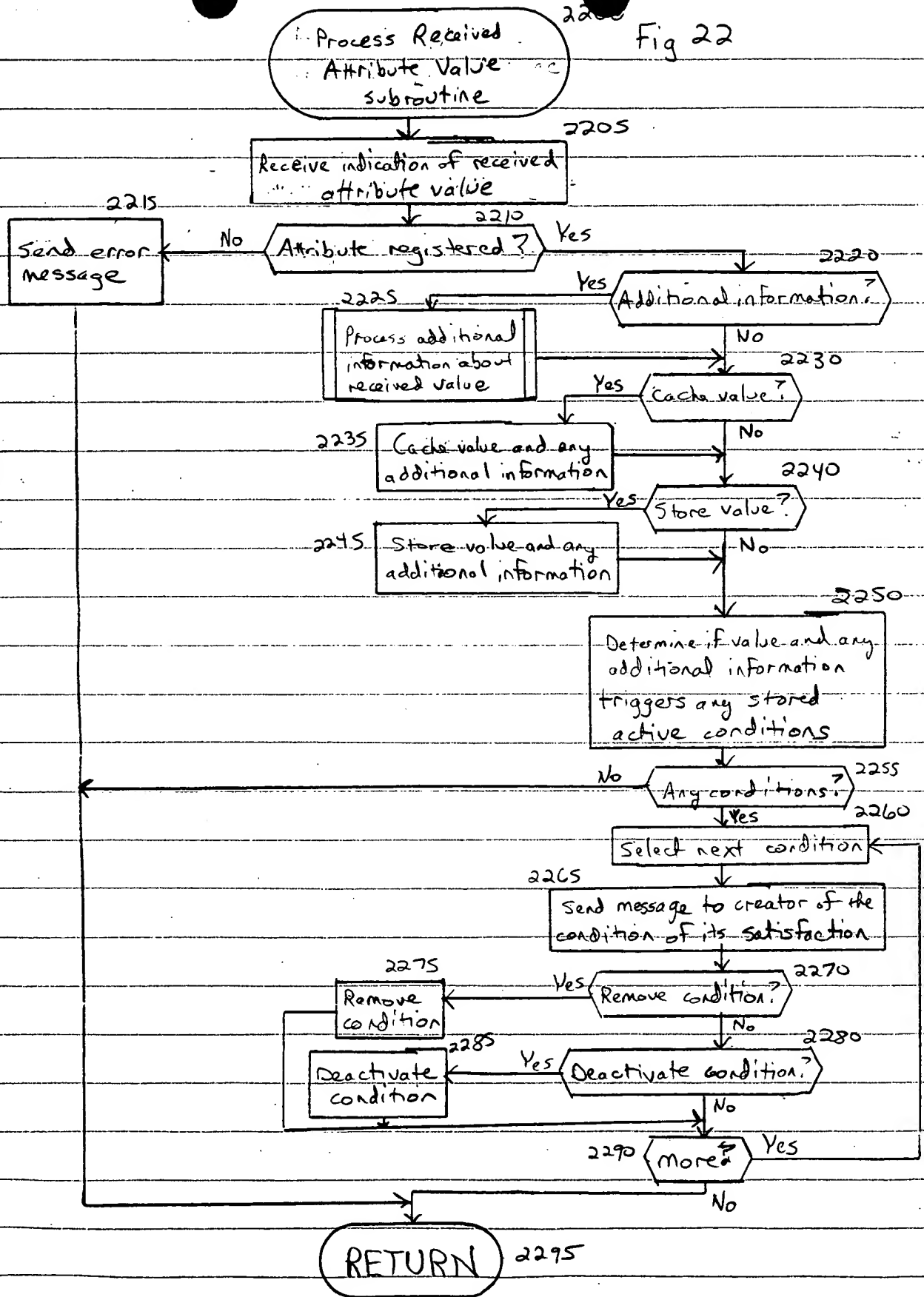
2136 Select received value

2138 Select next request

2140 Push selected attribute
value to client

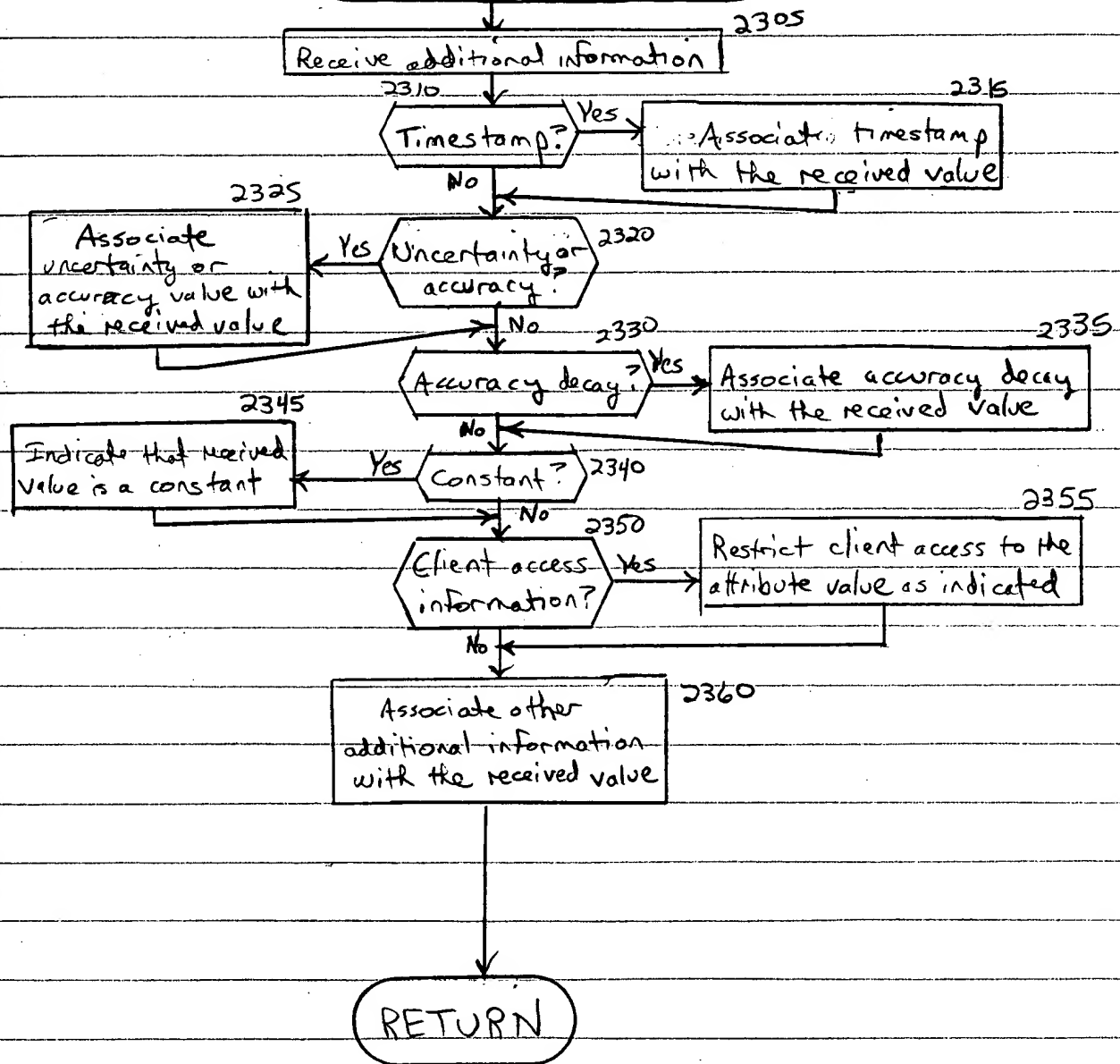
2142 More?
Yes
No

Fig 22



Process Additional Information
About Received Value
Subroutine

Fig. 23



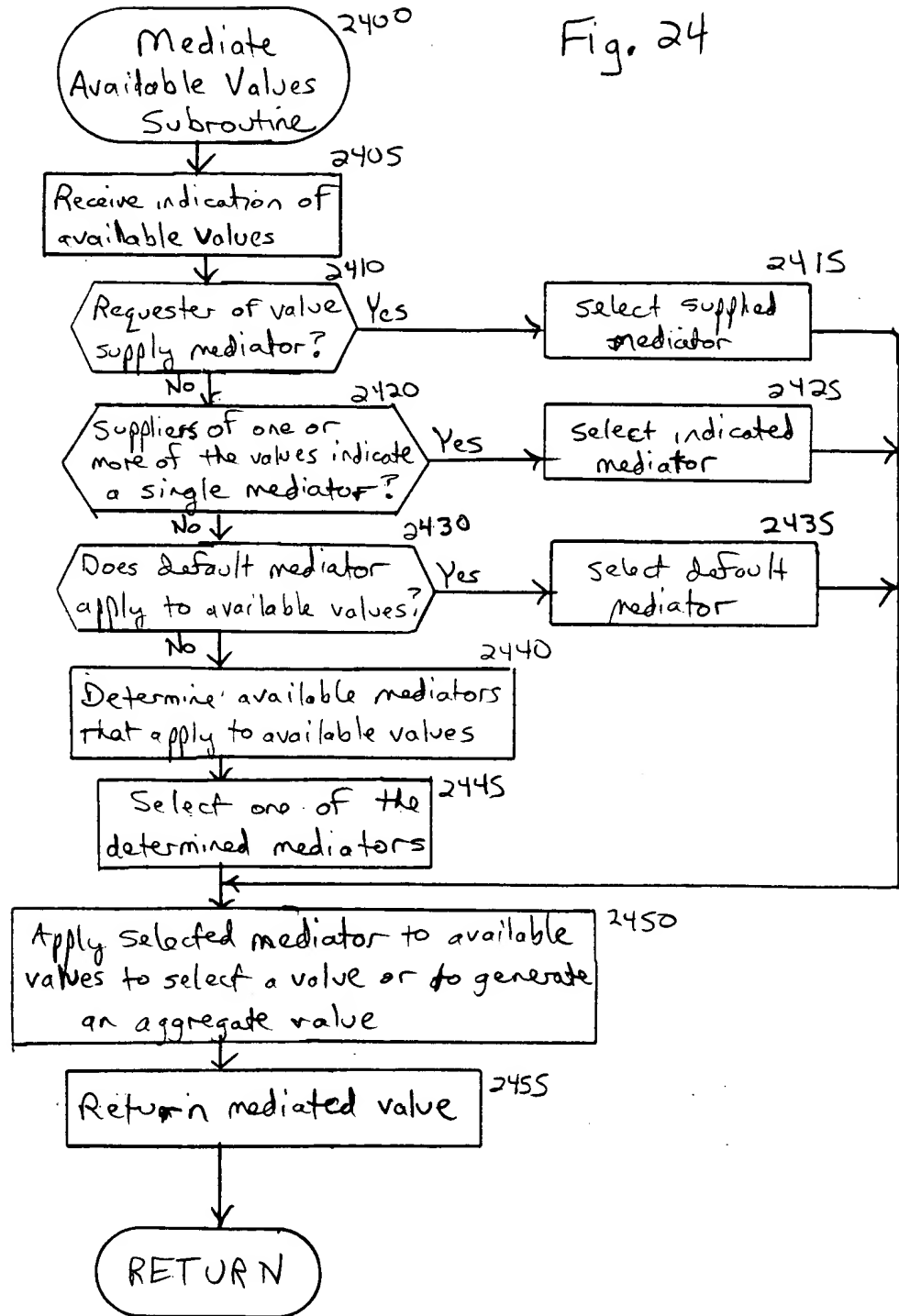


Fig. 24

Fig. 25

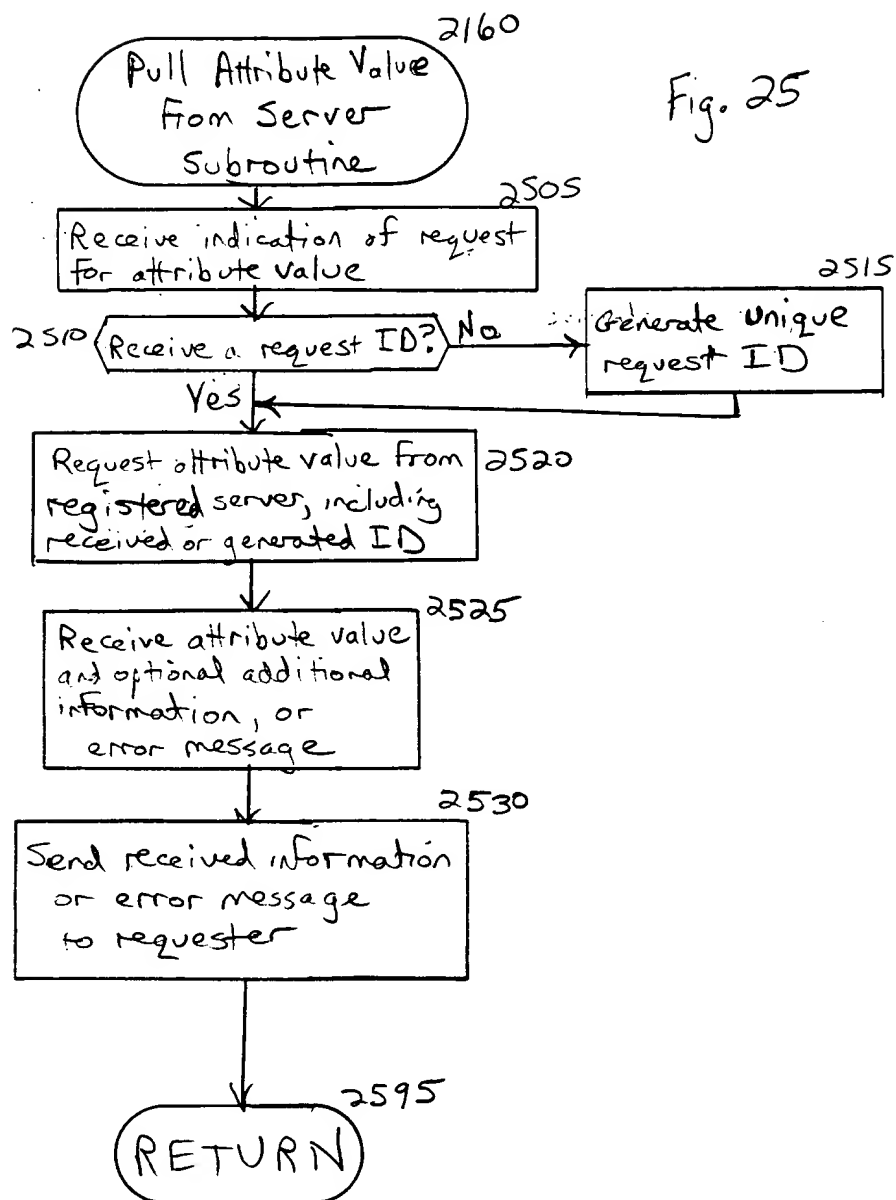
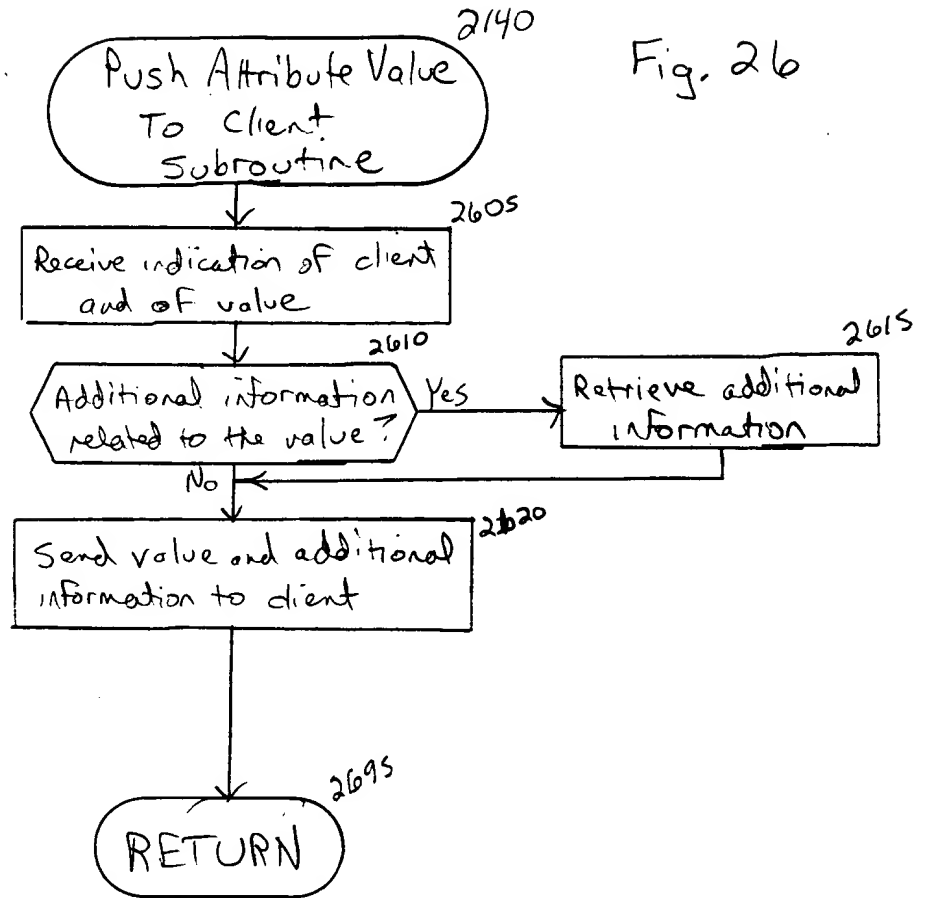
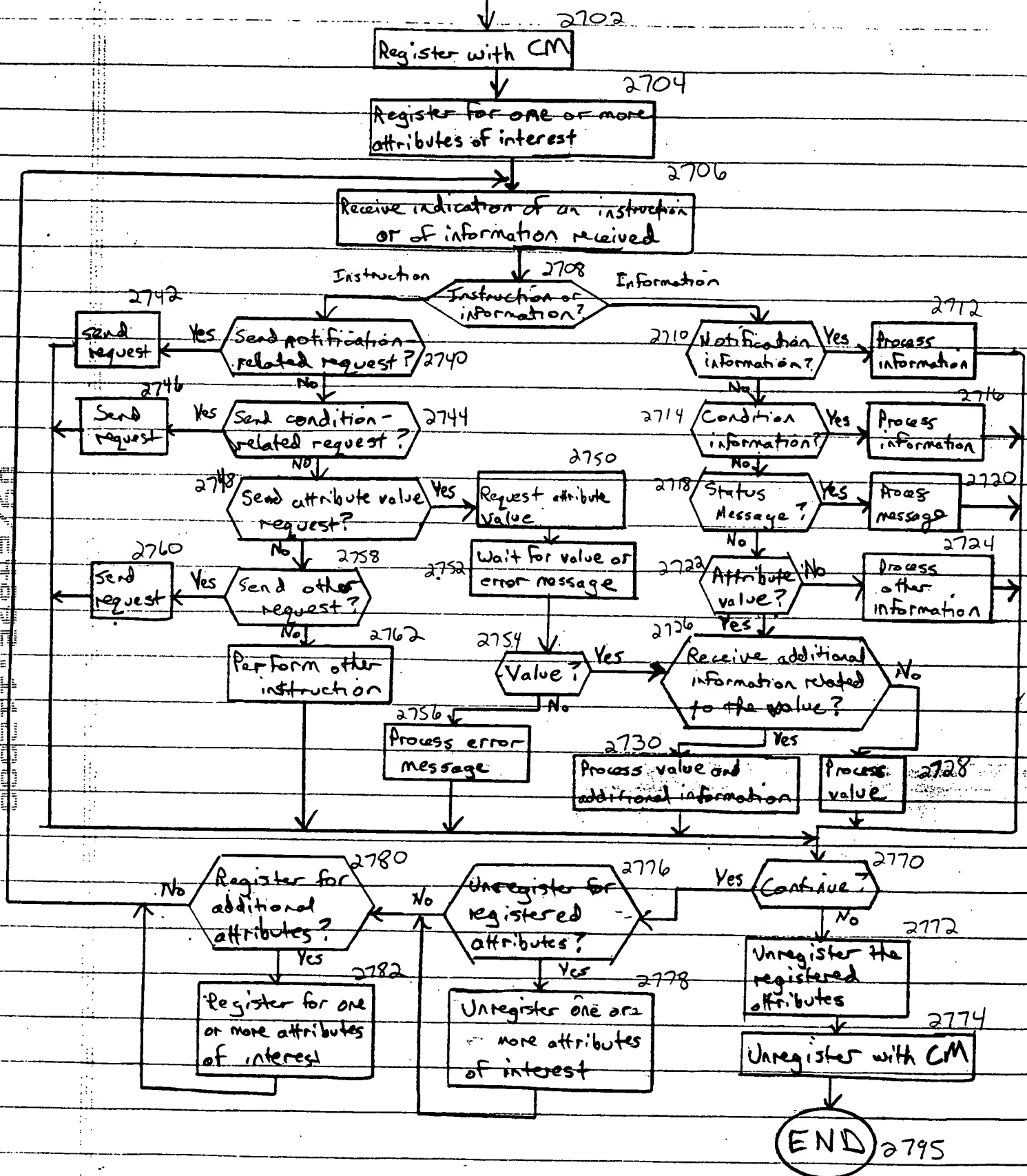


Fig. 26



Context Client Routine 2700

Fig. 27



Context Server Routine 2800

Fig. 28

